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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,582	03/10/2004	Jian-Ku Shang	ILL09-029-US	4720
43320	7590	09/27/2007		
EVAN LAW GROUP LLC 600 WEST JACKSON BLVD., SUITE 625 CHICAGO, IL 60661			EXAMINER GRAY, JILL M	
			ART UNIT 1774	PAPER NUMBER
			MAIL DATE 09/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/797,582

Applicant(s)

SHANG ET AL.

Examiner

Jill M. Gray

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-19 and 28-42 is/are pending in the application.
- 4a) Of the above claim(s) 40-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-19 and 28-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/27/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 16-19 and 28-38 is withdrawn in view of the newly discovered reference(s) to Yagi et al., 3,956,185 and Lee et al., US 2005/0164876 A1. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 16-19, 28-33, 36 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Yagi et al., 3,956,185 (Yagi).

Yagi discloses ceramic coated fibers comprising fiber having a ceramic coated on the fiber, wherein the ceramic has a BET surface area of at least 60 m²/g, and wherein the ceramic comprises crystalline ceramic and further comprises silver and/or palladium, as required by present independent claim 16, also disclosing a ceramic coated fiber wherein the ceramic has a BET surface area of at least 50 m²/g and where the ceramic comprises alumina, magnesia or zirconia, as required by present independent claim 28 and further comprising silver or palladium, per claim 31. See entire document, and in particular, abstract, column 1, lines 59-63, column 2, lines 38-43, the Table, and column 7, lines 3-13. In addition, Yagi discloses that the ceramic can be titania, as required by claim 17, and clearly anticipates all of the ceramic coatings of

Art Unit: 1774

claim 18 and the BET surface areas of claims 19, 29, 32-33, and 36. Also, Yagi discloses that the ceramic is present in the ceramic coated fibers in amounts within the instant claimed ranges of present claims 30 and 39. See for example, Example 1, which discloses about 42% by weight of ceramic.

Therefore, the teachings of Yagi anticipate the invention as claimed in present claims 16-19, 28-33, 36, and 39.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16-19 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al., US 2005/0164875 A (Lee) in view of Yagi et al, 3,956,185 (Yagi), as applied above.

Lee discloses a ceramic coated fiber comprising fiber and ceramic coated on the fiber, wherein the ceramic has a BET surface of at least 60 m²/g, and wherein the ceramic comprises TiO₂ as required by claims 16-19, and 36. Lee does not teach the ceramic coating further comprising silver and/or palladium. See entire document, and in particular, abstract, [0029], [0030], and [0040]. Yagi is as set forth above and teaches ceramic coated fibers comprising fiber having a ceramic coated on the fiber, wherein the ceramic has a BET surface area of at least 60 m²/g, and wherein the ceramic comprises crystalline ceramic such as TiO₂ and further comprises silver and/or

Art Unit: 1774

palladium with is added as a catalyst component. It would have been obvious to one having ordinary skill in the art to modify the ceramic coated fiber of Lee by adding silver and/or palladium to enhance the catalytic activity of the ceramic coated fiber.

Regarding claims 37 and 38, Lee discloses a BET surface area of 96, further disclosing higher photocatalytic activity due to the increased BET surface area. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Lee by increasing the BET surface area to amounts of at least $100 \text{ m}^2/\text{g}$ with the reasonable expectation of success of enhanced photocatalytic activity.

Therefore, the combined teachings of Lee and Yagi would have rendered obvious the invention as claimed in present claims 16-19 and 36-39.

6. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yagi et al., 3,956,185 (Yagi) as applied above to claims 16-19, 29-33, 36, and 38, in view of Lee et al., US 2005/0164876 A1 (Lee) as applied above to claims 16-29 and 36-39.

Yagi is as set forth previously but does not teach a BET surface area of at least $100 \text{ m}^2/\text{g}$. Lee is as set forth above and teaches ceramic coated fiber comprising fiber and ceramic coated on the fiber, wherein the ceramic comprises TiO_2 and has a BET surface of 96, resulting in higher photocatalytic activity due to the increased surface area. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Yagi by increasing the BET surface area

Art Unit: 1774

to amounts of at least $100 \text{ m}^2/\text{g}$ with the reasonable expectation of success of enhanced photocatalytic activity.

Therefore, the combined teachings of Yagi and Lee would have rendered obvious the invention as claimed in present claims 34 and 35.

No claims are allowed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill M. Gray whose telephone number is 571-272-1524.

The examiner can normally be reached on M-Th and alternate Fridays 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1774

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jill M. Gray
Primary Examiner
Art Unit 1774

jmg